

## REMARKS

Applicants respectfully request reconsideration and allowance of the application.

### I. CLAIMS STATUS

Claims 22 – 41 are currently pending.

### II. OBJECTION TO THE SPECIFICATION UNDER 35 U.S.C. 132(a)

As a preliminary matter, Applicants note that the November 13, 2006 Reply contains two typographically errors that need to be corrected. The first typo is in the Reply at page 2, paragraph #1, line 2. This sentence erroneously states “Please add the following paragraph immediately after the paragraph ending on page 2, line 25 . . .” This sentence should read: “Please add the following paragraph immediately after the paragraph ending on page 5, line 25:” (emphasis added). In other words, the new paragraph should be inserted on page 5 of the specification, not page 2. The second typo is in the Reply at page 2, paragraph #2, line 1. This sentence erroneously states “Please replace the paragraph beginning on page 2, line 26 with the following paragraph . . .” This sentence should read: “Please add the following paragraph immediately after the paragraph ending on page 5, line 25:” (emphasis added). In other words, the replacement paragraph is on page 5 of the specification, not page 2.

The specification amendments contained in the above Amendments to the Specification section are intended to correct these typographically errors and enter the paragraphs at the proper locations in the specification.

In response to the objections under Section 132(a), Applicants respectfully submit that the newly added paragraph at page 5, line 26 is fully supported by the original specification and that no new subject matter is being added. Support for the subject paragraph is found in the specification with reference to FIGS. 1 – 3, 6 and 8, as well as at page 9, line 5 – page 10, line 5. Also, the present application is a C-I-P and incorporates by reference the subject matter of U.S. Patent 7,017,905. Further support for the subject paragraph is found in the '905 parent patent at FIG. 1, column 5, line 24 – column 7, line 15 and column 8, line 41 – column 9, line 5. Thus, the paragraph in

question does not add any new subject matter.

### III. DOUBLE PATENTING

A terminal disclaimer has been included herewith.

### IV. REJECTIONS UNDER 35 U.S.C. § 103(a)

Claims 22 – 25, 27 – 29 33 – 35 and 37 – 38 stand rejected under Section 103(a) as being obvious in view of U.S. Patent 6,588,748 (“Solow”) and U.S. Patent 4,641,840 (“Larson”); claims 26 and 36 stand rejected under Section 103(a) as being obvious in view of Solow, Larson and U.S. Patent 3,755,241 (“Brady”); and claims 30 – 31 and 39 – 40 stand rejected under Section 103(a) as being obvious in view of Solow, Larson and U.S. Patent 6,394,903 (“Lam”). Applicants respectfully traverse these rejections and request their withdrawal for at least the following reasons.

#### A. Prima Facie Obviousness Has Not Been Established Because the Cited References Fail to Teach or Suggest All of the Claimed Features

According to MPEP § 706.02(j), for a claim to be obvious, there must be a) a suggestion or motivation to combine reference teachings, b) a reasonable expectation of success, and c) the references must teach all of the claim limitations, *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). It is well established that the cited combination of references must teach or suggest, either implicitly or explicitly, all of the claimed features. See MPEP § 2143.03, see also, e.g., *In re Dow Chemical*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988), and *In re Keller*, 208 U.S.P.Q.2d 871, 881 (C.C.P.A. 1981).

Independent claims 22 and 33 recite several features that are neither taught nor suggested by the cited references, either alone or in combination. First, claims 22 and 33 each recite a COB-mounted IC as part of the electronic circuit contained within the electronic die. Specifically, claim 22 recites:

“an electronic circuit, located within the cube-shaped shell . . . including an integrated circuit (IC) for illuminating one or more light emitting diodes (LEDs) illuminating the at least nineteen light-emitting pips according to the predetermined pattern, the IC being circuit-on-

board (COB) mounted to a printed circuit board (PCB) . . . .”  
(Emphasis added).

And claim 33 recites:

“an electronic circuit, located within the shell . . . including an integrated circuit (IC) for illuminating the at least one light source according to the predetermined pattern, the IC being circuit-on-board (COB) mounted to a printed circuit board (PCB) . . . .” (Emphasis added).

In no instance do the cited references teach or suggest an electronic circuit within an electronic die that includes an “IC being circuit-on-board (COB) mounted to a printed circuit board (PCB)”. Circuit-on-board (aka chip-on-board) mounting techniques allow bare IC chips to be mounted directly on a PCB, which eliminates conventional IC packages and dramatically reduces PCB size. The claimed COB-mounted IC is a significant advantage of Applicants’ electronic die because it allows further miniaturization. None of the cited references teaches or suggests an electronic die including a COB-mounted IC. For at least this reason, claims 22 and 33, as well as claims 23 – 32 and 34 - 41 by their respective dependency, are patentable over the cited references.

Second, claims 22 and 33 each recite an electronic circuit that illuminates the die pips in a predetermined pattern. The word “predetermined” means: determined, decided, or established in advance. See American Heritage Dictionary, 4<sup>th</sup> Ed. Thus, the claimed “predetermined pattern” means an illumination pattern that is established in advance of its display. The cited references entirely fail to teach or suggest this claimed feature. The Examiner has acknowledged that Solow is silent as to this feature, but states that Larson teaches the feature. Applicants respectfully disagree with this conclusion. Larson does not teach or suggest a predetermined illumination pattern. In sharp contrast to claims 22 and 33, Larson teaches a random illumination display pattern. Larson’s die displays a random sequence of numbers on its side while it is being rolled, and then freezes that last displayed random number when the rolling stops. See Larson col. 4, line 7 – col. 6, line 27. Larson totally eschews any sort of predetermined patterned display. The reference teaches:

“It should be noted that number generator 46 produces a sequence of numbers in such rapid manner that the effect produced is the same as that of a random number generator. Because the one to six count is so rapid relative to the operation of the motion switch, the number displayed is, in essence, random and for all practical purposes independent of the playing die motion. It will be apparent, therefore, that a random number circuit may be substituted for number generator 46 without departing from the scope of the present invention.” Larson at col. 5, line 66 – col. 6, line 7.

As can be readily observed from the above, Larson plainly does not teach or suggest the predetermined pattern claimed by Applicants. If anything, Larson suggests that exact opposite of what is claimed: a random pattern. For at least the foregoing reasons, claims 22 and 33, as well as claims 23 – 32 and 34 - 41 by their respective dependency, are patentable over the cited references.

Third, claims 22 and 33 each recite an electronic circuit that illuminates the die pips for a “predetermined duration”. Applying the same dictionary definition given above for “predetermined”, the claimed “predetermined duration” means a period of time that is established in advance. The cited references entirely fail to teach or suggest this claimed feature. The Examiner has acknowledged that Solow is silent as to this feature, but states that Larson teaches the feature. Applicants respectfully disagree with this conclusion. Larson does not teach or suggest a predetermined display duration. In sharp contrast to claims 22 and 33, Larson teaches a display duration that depends on that amount of time that Larson’s die is in motion. See Larson col. 4, lines 8 – 39. The amount of time that Larson’s die is in motion is not known in advance, and thus, the display duration is not predetermined. It depends on how long someone rolls or shakes the die. This is not a predetermined value. Furthermore, nothing in the cited references teaches or suggests that this is a known value. Thus, if Larson suggests anything, it is an unknown, random duration, which is the opposite of what is claimed. For at least these additional reasons, claims 22 and 33, as well as claims 23 – 32 and 34 - 41 by their respective dependency, are patentable over the cited references.

B. Prima Facie Obviousness Does Not Exist Where the Suggested Modifications Destroy the Intended Purpose of a Cited Reference

A proposed modification to a prior art device is not obvious if the modification

makes the device inoperative for its intended purpose. MPEP 2143.01; *In re Gordon*, 773 F.2d 900 (Fed. Cir. 1984). In the Office Action, the Examiner proposes adding Larson's internal electronic circuit, sensor and battery to Solow's dice to arrive at Applicants' claimed electronic die. Applicants' respectful submit that such a modification does not meet the standards of obviousness because modifying Solow's dice as proposed would plainly defeat the intended purpose of Solow's dice.

Solow's dice are novelty items for display purposes only, not for playing games. See Solow, abstract. They are of the same genre as the classic fuzzy dice that hang from car rearview mirrors. Solow, col. 1, lines 58 – 63.

In sharp contrast to Applicants' die, Solow's dice are designed to be exclusively powered by an external power source, not an internal source such as a battery. In particular, Solow states: "Instead of having an internal battery which is expensive and hard to replace, the illumination of the of the (sic) dots of the present invention is actuated by an external power source such as a cord connected to a jack for plugging into a cigarette lighter." Solow, col. 1, line 67 – col. 2, line 4. Indeed, an essential element of Solow's claimed invention is a "conductor means for electrically connecting said light sources to an external power source." See Solow, col. 4, lines 2 – 3, 29 – 30 and col. 5, lines 4 – 5. Furthermore, Solow's dice are designed to hang from their conductor wires on display. Solow, col. 2, lines 54 - 65.

Replacing Solow's external power cord with batteries, as proposed by the Examiner, would destroy the ability to display Solow's dice by hanging them from their power cords and would also defeat Solow's intent of powering the dice with an external source. Plainly, this would ruin the central purpose of Solow's dice and teachings. Thus, the proposed modification is improper under the MPEP guidelines and does not satisfy the legal test for obviousness. Therefore, claims 22 – 41 are patentable over the cited references for at least this reason.

C. Prima Facie Obviousness Has Not Been Established Because the Rationale for Making the Proposed Modification Is Not Reasonable

An examiner must present a convincing line of reasoning in support of combining two or more references to make a Section 103 rejection. MPEP 2144; *Ex*

*parte Clapp*, 227 USPQ 972 ( Bd. Pat. App. & Inter. 1985). in this case, the Office Action states that the combination of Solow and Larson is desirable “to provide some level of amusement and interest when rolling the die in a new and exciting manner.” Office Action at page 6. Applicants’ respectfully submit that Solow’s dice are not designed or intended to be rolled, nor would one of ordinary skill ever expect them to be rolled in the sense that gaming dice are rolled. They are for display purposes only. They have cords hanging from them. Thus, the above-quoted suggestion to combine the teachings of Solow and Larson is not convincing or reasonable, and therefore, *prima facie* obviousness has not been established. For at least this reason, claims 22 – 41 are patentable over the cited references.

D. The Cited References Fail to Teach or Suggest All of the Claimed Features of the Dependent Claims

Dependent claims 24 and 34 recite “wherein the shell is transparent and the electronic die further comprises an opaque layer of material disposed on the transparent shell in a predetermined pattern defining the light-emitting pips.” The Office Action states that these features are taught by Solow at figure 2 and col. 3, lines 23 – 28. Office Action at page 5. Applicants respectfully disagree. Paraphrasing Solow, Solow teaches that the light-up “dots can be non-opaque integral parts of the material of the otherwise opaque die faces.” Solow, col. 3, lines 24 - 25. This plainly does not teach or suggest the structure recited in claims 24 and 34, which requires transparent die faces covered, in part, by an opaque layer that defines the light-up dots. For at least these additional reasons, claims 24 and 34 are patentable over the cited references.

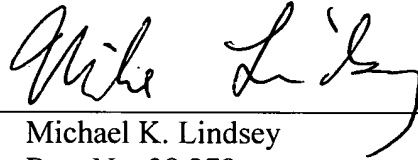
Dependent claim 25 recites “wherein the at least one battery is a coin cell battery.” This feature is not taught or suggested by the cited references and provides significant advantage because it allows further miniaturization of the electronic die. Thus, claim 25 is patentable over the cited references for at least this additional reason.

V. CONCLUSION

Each of the pending claims in the application is in condition for allowance and early notice to this effect is earnestly solicited. If, for any reason, the Examiner is unable

to allow the application and feels that a telephone conference would be helpful to resolve any issues, the Examiner is respectfully requested to contact the undersigned Applicant at 520-760-8268.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Mike Lindsey", written over a horizontal line.

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